
Mistakes in Medical Practice

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INTRODUCTION

Mistakes are inevitable in the practice of medicine. They result, in part, from the complexity of medical knowledge, the uncertainty of clinical predictions, the pressures of time, and the need to make treatment decisions despite limited or uncertain knowledge. Although much attention has been focused on the effects of errors on patients, it must be understood that medical mistakes are correspondingly distressing for physicians, evoking intense emotions of shock, remorse, guilt, anger, and fear.

If dealt with effectively, mistakes can also provide powerful learning experiences for physicians; however, difficulty in dealing with them may impede both learning and efforts to prevent future errors. Professional norms that assume infallibility and treat mistakes as anomalies pose significant barriers to learning from them. Judgmental institutional responses and fear of litigation are further disincentives to the open discussion of mistakes. Although some individuals may learn from their own mistakes and make subsequent changes in practice, others are less likely to benefit from these lessons.

Definition

A medical mistake can be defined as an act of commission or omission that has serious, or potentially serious, consequences for the patient, and which would be judged wrong by knowledgeable peers at the time it occurs. The usual definition excludes unavoidable bad outcomes and foreseeable complications of disease or correctly performed procedures. Mistakes differ from negligence or malpractice in that a mistake is not necessarily the proximate cause of harm to a patient. It is clear that not all judgments that precede bad outcomes are necessarily wrong. Several factors, such as the severity of the outcome and the perceptions of colleagues and others—including the patient and family—may cause an event to be considered as a mistake.

Prevalence

Most of the relatively few studies of mistakes have focused on the hospital setting and have examined injuries rather than errors. Although the overall prevalence of medical mistakes is difficult to ascertain, it appears that they are common. Iatrogenic events occurred in the care of 36% of patients hospitalized on a general medical service in a teaching hospital. A large study of patients hospitalized in New York State in 1984 found that injuries occurred in nearly 4% percent of hospitalizations, with a quarter of these events judged to have been due to negligence. In a survey of 254 medical residents, 114 responded (45%) and reported a significant mistake made during the prior year. On an academic medicine service, preventable adverse events occurred in 4% percent of more than 3146 admissions. Autopsy studies show that medical diagnoses are often found to have been mistaken. Other studies document that medical errors are common in hospitalized patients, although most mistakes do not produce adverse outcomes. The prevalence of mistakes in outpatient practice has not been studied.

Types

Mistakes occur in every aspect of medical practice—in diagnosis, in decision-making, in ignorance of facts, in the pace of evaluation or its timing, in prescribing medications, or in performing procedures. Mistakes can be classified along a number of dimensions, including cause, outcome (whether the patient was injured, and, if so, how severely), quality of care (whether the care was standard or substandard), and locus (where in the process of medical care the error occurred). Mistakes can also be classified as errors of commission and errors of omission. Table 32-1 shows one classification of the types of medical mistakes.

The Harvard Medical Practice Study found that among 1133 patients with disabling injuries caused by medical treatment, 28% were judged to be due to negligence. The most common adverse event involved performance or follow-up of a procedure or operation

Table 32-1. Types of medical mistakes.

Error	Example
Diagnosis or evaluation	Missed diagnosis
Medical decision-making	Inappropriate or premature discharge
Treatment	Waiting when treatment is indicated
Medication	Incorrect dosage
Procedural complications	Faulty technique
Faulty communication	Failure to convey information during sign-out
Inadequate supervision	Failure to review treatment plan

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(35%). Failure to take preventive measures (eg, failure to guard against accidental injury) were the next most common (22%), followed by diagnostic errors (eg, failure to use indicated tests, act on test results, or avoid delays in response) (14%), errors involving drug treatment (9%), and system errors (2%).

A review of New Jersey malpractice claims from 1977 to 1989, for which payment was made or negligence determined, found that errors in patient management (eg, diagnostic errors, decision errors, improper management, medication errors, unnecessary treatment, or problems in communication), were more common than were errors in technical performance or medical and nursing staff coordination.

Causes

Physicians report a variety of reasons for their mistakes and frequently attribute the mistakes to more than one cause. In one study, house officers most often reported that mistakes were caused in part because they did not possess specific essential knowledge (eg, being unaware of the significance of a prolonged episode of ventricular tachycardia). Almost as often, they cited "too many tasks" (one resident neglected to continue a required medication because he was "too busy with other sick patients, and supervising interns and students."). Fatigue was a significant factor (after inadvertently ordering potassium replacement as a bolus, one resident commented, "It was 3:00 AM, and I'm not sure I was completely awake"). A study of an inpatient medical service, found cross-coverage to be a significant predictor of preventable adverse events. Table 32-2 summarizes common causes of medical mistakes.

The pressures of practicing medicine in a managed care setting, especially in capitated systems with higher demands for productivity, may increase the risk that a hurried physician will overlook important diagnostic information or make a prescription error.

Table 32-2. Common causes of medical mistakes.

<ul style="list-style-type: none"> ■ Ignorance ■ Inexperience ■ Faulty judgment ■ Hesitation ■ Fatigue ■ Job overload ■ Breaks in concentration ■ Faulty communication ■ Failure to monitor closely ■ System flaws
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Similarly, the incentives offered by third-party payers to order fewer diagnostic tests and to limit the number of referrals to subspecialists can lead to errors of omission.

Circumstances

Mistakes seem to occur more frequently during residency training, possibly because interns and residents are learning new skills, honing their clinical judgment, and accepting new responsibilities. Although first-year residents in one study made the highest proportion of prescription errors (4.25 per 1000 orders), more experienced physicians have also reported making serious medical mistakes.

Many mistakes happen in the inpatient or emergency room setting. Severely ill patients, with unstable conditions such as those in intensive care or emergency departments, require rapid assessment of a complex clinical picture and multiple procedures, evaluations, and decisions, thus presenting many opportunities for mistakes to occur. In the Harvard Medical Practice Study, reviewers found that about 73% of negligent adverse events occurred in the hospital, 8% in the emergency room, and 8% in the physician's office.

Patient characteristics can also increase the risk of mistakes. The risk of iatrogenic events increases with age, the length of the hospital stay, and the number of drugs prescribed. Older patients, for example, are likely to have advanced disease and comorbid conditions and to be taking numerous medications. These factors increase both the risk of errors and the likelihood that complications of treatment will make these errors consequential.

Serious medical mistakes certainly occur in office practice. Some practicing physicians contend that the probability of making a serious error increases with the number of years in practice, particularly with the current pressures to increase productivity (see Chapter 7).

THE OUTCOMES OF MEDICAL MISTAKES

Consequences for Patient & Family

Minor errors may produce no serious consequences. Sometimes more serious errors, if recog-

nized and corrected, may have no major consequences. In such cases, there may be no judgment that a mistake has occurred, or it may be disregarded as a minor occurrence. Serious errors, however, often have significant and multiple consequences for the patients involved, such as physical discomfort, emotional distress, additional therapy or procedures, prolonged hospital stay, worsening of disease, or death. Mistakes can also cause distress for family members, including worry, anger, and guilt, particularly if they were involved in making treatment decisions.

Consequences for Physicians & Colleagues

Physicians also experience emotional distress in reaction to a medical mistake. After a fatal mistake involving a young patient, one house officer wrote, "This event has been the greatest challenge to me in my training." Clinicians report a variety of emotional responses from remorse, anger, guilt, and feelings of inadequacy to fear—particularly the fear of negative repercussions, such as malpractice suits.

Physicians occasionally report persistent negative psychological effects from mistakes. After a mistake caused the death of a patient, one house officer commented, "This case has made me very nervous about clinical medicine. I worry now about all febrile patients, since they may be on the verge of sepsis." For another house officer, a missed diagnosis made him reject a career in subspecialties that would involve "a lot of data collection and uncertainty."

Consequences for the Physician-Patient Relationship

In some cases, depending on the severity of the outcome for the patient and the quality of communication between physician and patient, the physician-patient relationship may be harmed by a mistake. For the physician, feelings of guilt, shame, or shaken confidence may lead to avoidance of the patient or to a diminution of open and frank discussion. One physician, for example, reported that his guilt from the death of a patient led him to act like an indentured servant to the patient's family, attempting to expiate his "crime" over a prolonged period of time by spending more time with the family and reducing his fees.

For the patient, learning about a mistake may cause alarm and anxiety, destroying the patient's faith and confidence in the physician's ability to help. There may be anger, an erosion of trust, decreased respect, or feelings of betrayal that diminish openness. Patients may become disillusioned with the medical profession in general, causing them to decline or reduce their adherence to beneficial treatments or habits.

To the extent that doctor and patient can discuss their emotions directly and with mutual acceptance, the relationship is likely to endure; it may even deepen with time. The negative effect of a mistake on the doctor-patient relationship may also be mitigated if there is a history of shared decision-making, which

diffuses the responsibility of the physician, especially when there has been uncertainty about treatment.

It should be noted also that mistakes that are nationally—or even locally—reported in the press can damage public trust in the medical profession. Any loss of credibility can be harmful to the public health by creating cynicism about medical care and research findings and discouraging individuals from seeking care or adopting healthful behaviors.

RESPONDING TO MEDICAL MISTAKES

The way in which physicians respond to mistakes can turn these experiences into powerful opportunities for learning and for personal growth.

Individual Responses

Coping with Mistakes: Two major modes of coping are **problem-focused**, in which coping is directed at the problem causing the distress; and **emotion-focused**, in which coping is directed at managing the emotional distress caused by the problem. Effective coping can prevent such unhealthy responses as denial, cynicism, and excessive concern. The use of effective coping strategies can also play a role in modulating physician stress and increasing physician work satisfaction.

Table 32-3 briefly summarizes some of the many possible strategies for coping with medical mistakes. Among these, accepting responsibility and problem-

Table 32-3. Potential strategies for coping with medical mistakes.

Approach	Strategy
Problem-focused	Acceptance of responsibility Consultation to understand nature of mistake Consultation to correct mistake Planned problem-solving (eg, obtaining extra training)
Emotion-focused	Pursuance of social support Disclosure to colleague, friend, or spouse Disclosure to patient Emotional self-control (eg, repressing one's emotional response) Escape-avoidance Distancing Reframing of mistake (eg, recognizing it as inherent in practicing medicine)

Source: Adapted, with permission, from Wu AW et al: How house officers cope with their mistakes. *West J Med* 1993;159:565; and Christensen JF et al: The heart of darkness: The impact of perceived mistakes on physicians. *J Gen Intern Med* 1992;7:424.

solving techniques may be those most often used. As an example, "accepting responsibility" would include such statements as: "I made a promise to myself that things would be different next time"; "I criticized or lectured myself"; and "I apologized or did something to make up." Seeking social support and controlling emotions may be somewhat less frequently employed, and escape-avoidance and distancing are used even more rarely.

Accepting responsibility is a prerequisite to learning from a mistake, and physicians who cope by accepting responsibility for their mistakes seem to be more likely to make constructive changes in practice. They may also be more likely to experience emotional distress, however, as in the case of the resident who described persistent feelings of guilt and shame after realizing that inappropriate management of a diabetic patient's foot ulcer led to an amputation.

Disclosure to Patients and Families: It is difficult to disclose mistakes to patients or their families, and several reports suggest that physicians are reluctant to tell patients about mistakes. In one study, such disclosure was reported by less than one quarter of house officers, yet legal and ethical experts suggest that those involved should generally be told about errors. Disclosure of a mistake also fosters learning by compelling the physician to acknowledge it truthfully. In addition, disclosing a mistake to the patient may be the only way for the physician to achieve a sense of absolution.

Telling patients about mistakes is made more difficult by the lack of guidelines about how to do so, and all physicians must develop their own approach to each case. Disclosure and discussion of an error with the patient or family can be made easier by several techniques. Physicians should first try to acknowledge their own emotions. Before approaching the patient or family, it may be helpful to perform a simple relaxation exercise and to remind oneself that the event and present feelings do not define the physician as either a healer or a person. Rehearsing a few simple, direct statements ahead of time can provide a road map for the physician in this awkward moment. When meeting the patient or family, the physician should make a brief, direct statement, accompanied by a genuine apology. Such directness may help avoid the kind of long and rambling discussion that often increases anxiety for both physician and patient.

The physician who has mistakenly prescribed a medication without checking the patient's allergies, for example, might tell the patient: "Mr. Jones, I've discovered what made you sick last week. I regret to say that I failed to check whether you were allergic to the antibiotic before I prescribed it. You are allergic to it, and that information is clearly written in your chart. I feel awful that my not checking has caused you so much distress. I am truly sorry." It would then be appropriate to pause and allow the patient to respond.

Reflecting and accepting the patient's feelings can help to begin to heal the relationship more effectively than overwhelming the patient with information and explanations. The doctor-patient relationship can be enhanced by honesty in this most difficult and sensitive moment (see Chapter 3).

Disclosure to Colleagues: Physicians also seem to be reluctant to tell their colleagues about mistakes. Some physicians report that they find this kind of discussion both threatening, because of the fear of judgment by colleagues, and unhelpful, because of the tendency of colleagues to minimize the mistake. Most often, discussing mistakes with colleagues serves the purpose of problem-focused coping: correcting a mistake. Sharing mistakes with colleagues can also prevent isolation and start the necessary process of remorse and learning.

Changes in Practice: Table 32-4 summarizes changes in practice that often follow medical mistakes. These changes can be constructive, or they can be defensive—and maladaptive—in nature. Constructive changes cited by physicians include paying more attention to detail, confirming clinical data personally, changing protocols for diagnosis and treatment, increasing self-care, changing methods of communication with staff, and being willing to seek advice.

Physicians also report making defensive changes, however. These include an unwillingness to discuss the mistake, avoidance of similar patients, and—in some circumstances—ordering additional tests. Defensive changes in practice are more likely to occur if the institutional response to a mistake is punitive or judgmental.

Learning from Mistakes: Several factors may determine the extent to which physicians learn from mistakes. When negative emotions such as shame,

Table 32-4. Common changes in practice following mistakes.

Constructive Changes	Defensive Changes
Increasing information-seeking ■ Asking advice ■ Reading ■ Increasing vigilance ■ Paying more attention to detail ■ Confirming data personally ■ Changing data organization ■ Ordering additional tests as appropriate ■ Improving screening for disease ■ Improving communication with patients Improving self-pacing Improving communication with staff Supervising others more closely	Being unwilling to discuss the error Avoiding patients with similar problems Ordering additional but unnecessary tests

guilt, or humiliation follow from the mistake, the physician's energy may focus on the emotional aspects of coping. Addressing these negative emotions directly can enhance the physician's ability to learn new information or new approaches to the problem. The cause to which the physician attributes the mistake can also affect learning. Physicians in one study were more likely to report constructive changes if the mistake was caused by inexperience or faulty judgment in a complex case; they were less likely to do so if they believed that the mistake was caused by overload. Physicians who responded to the mistake with greater acceptance of responsibility and more discussion were also more likely to report constructive changes.

Responding to Colleagues Who Make Mistakes: There are several important considerations when responding to a colleague who discloses a mistake. It is important to try to elicit or accept the colleague's self-assessment and to not minimize the importance of the mistake. At this point, a selective and discreet disclosure of one's own mistakes can reduce the colleague's sense of isolation and legitimize the discussion. It is then appropriate to inquire about the emotional effect of the mistake and how the colleague is coping with it. An important consideration here is that negative emotions are not necessarily problems to be solved, and they can often be mitigated by acknowledging them. The clinician should return to the content of the mistake and help the colleague to correct it with problem-solving techniques, making the necessary changes in practice, and incorporating the new lessons that have been learned.

Witnessing Mistakes by Others: When a physician sees a mistake made by another physician, the observer has several options: passively waiting for the physician to disclose the mistake, telling the patient directly oneself, advising the physician to disclose the mistake, or arranging a joint meeting to discuss the mistake. Although some physicians may feel an obligation to report mistakes they have seen, most are reluctant to say anything.

The simplest option, of course, is to wait for the physician who made the mistake to report it. There is no assurance, however, that the patient will actually be informed. Telling the patient directly may be awkward, particularly if the observing physician does not know the patient, and may interfere with the existing doctor-patient relationship. Advising the physician who made the error to tell the patient may fulfill the observing physician's responsibility for disclosure, but the patient may still not be informed. Simultaneously advising the physician and the hospital or clinic quality-assurance or risk-management personnel would increase the likelihood that the patient would be told. Arranging a joint conference would satisfy the observer that appropriate disclosure was made while preserving the primacy of the relationship between the patient and the treating physician (Figure 32-1).

Institutional Responses .

Hospitals: Physicians sometimes feel that the hospital atmosphere inhibits them from talking about their mistakes and that the administration is judgmental about mistakes. Some institutions have formal settings for discussing mistakes, such as morbidity and mortality conferences. Such important issues as a discussion of the physician's feelings about the mistake and disclosure by colleagues of how they coped with their own mistakes, however, are commonly avoided in these conferences. The risk-management departments of hospitals could take a leading role in this area—promoting comprehensive, supportive forums for discussing mistakes, using emotion-focused coping to maximize problem-focused learning and minimize future errors.

Graduate Medical Education: Although some physicians feel that public disclosure of mistakes is counterproductive, others assert that physician fallibility and methods of dealing with medical errors are appropriate topics for medical school and subsequent training. Although they may initially be reluctant, physicians sometimes find discussing a mistake to be a positive experience: "Presenting this case at interns' report was difficult—I felt under a lot of scrutiny from my peers. In the end, I felt as though I had gotten more respect from presenting this kind of case rather than one where I had made a great diagnosis."

Mistakes can be discussed in attending rounds, at morning report, or at morbidity and mortality conferences. When mistakes are discussed in these conferences, it is important to address issues such as overwork, shared responsibility with other physicians (eg, consultants, attending physicians), and appropriate protocols for communicating with staff. In addition, while ensuring that everyone involved learns from the mistake, care should be taken that errors are seen as an unfortunate inevitability in the practice of medicine and that there are appropriate ways of coping with them and of responding to colleagues who make them.

Primary Care Practice Groups: As group practice becomes the norm in managed care settings, it is important that such groups implement procedures for responding to mistakes. Collegial support should be an explicit rule, providing a safe and confidential setting for discussion of the mistake (see the guidelines discussed earlier, for responding to a colleague's mistake). It would also be wise for the practice group to formalize—and thus legitimize—periodic discussions about mistakes; these could broaden the scope of the emotion-focused support, allow members to learn from colleagues' mistakes, and address system flaws that contribute to the mistakes. A bonus of this approach is in the gain in personal well-being of the group members—a nonspecific, yet significant, contribution to the practice climate.

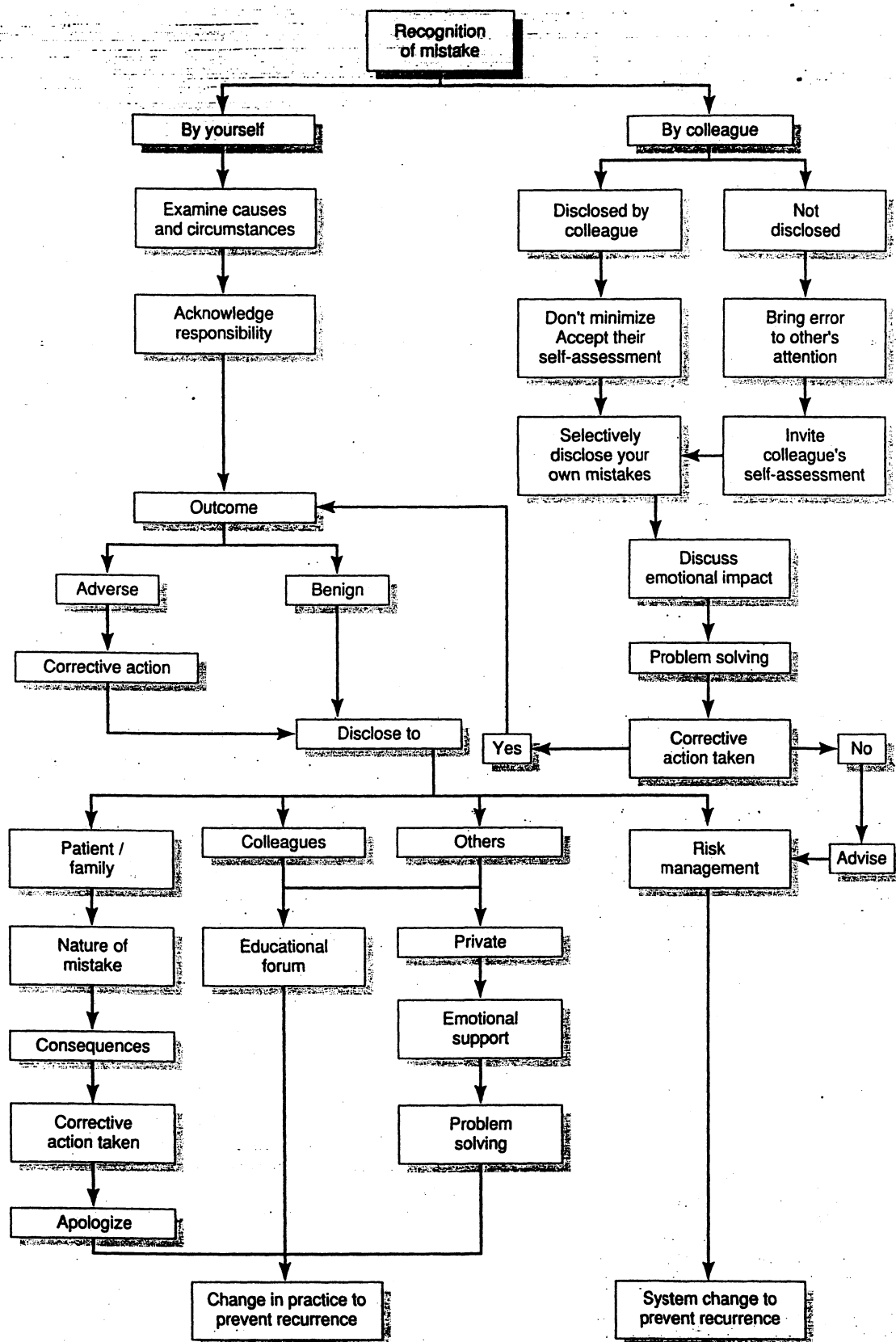


Figure 32-1. Process for responding to a mistake.

PREVENTING MISTAKES

Reducing the frequency and severity of mistakes is of the highest priority. There are several ways to help physicians learn from their mistakes and to make constructive changes in practice.

Physician Responsibility

As noted earlier, physicians should be encouraged to accept responsibility for their mistakes. Although those who do so seem more likely than those who do not to make constructive changes in practice, accepting responsibility for mistakes can engender emotional distress. It is therefore important for colleagues and supervising physicians to respond with sensitivity to the distress of practitioners acknowledging their mistakes. The probability of future mistakes can be reduced if the current error can be reviewed in a way that decreases emotional distress, invites disclosure of uncertainty in diagnosis and management, and leads to a discussion of appropriate changes in practice.

Administration & Supervision

Efforts to forestall errors must also take place at administrative levels. More active supervision may prevent some mistakes or mitigate their adverse effects. Senior physicians should be more available to their less-experienced colleagues for making critical decisions about patient care, especially in complex cases that require more mature clinical judgment. Group practice administrators and training-program directors should correct problems in staffing, scheduling, and the nature of work—which may all contribute to mistakes. Serious attention must be paid to the workload. Sleep deprivation during training may be a source of errors; job overload, fatigue, and being expected to perform too many tasks can also lead to mistakes. Working under these conditions may teach house officers to tolerate and rationalize errors; in addition, it may make them less likely to seek the corrective information that could help prevent future mistakes.

Identifying & Reporting Errors

Delineating the cause of a mistake often suggests specific strategies for preventing future mistakes.

Routine mechanisms to identify adverse events, such as anonymous reporting by physicians and nurses, or computerized feedback about adverse drug reactions, are necessary to provide information about the ubiquity, frequency and nature of mistakes. Developing routine methods of conveying information, such as computerized forms that standardize the type and amount of information exchanged between covering physicians, can also reduce errors.

Fail-safe mechanisms, such as the computerized systems now used by some pharmacies, should be put into place to prevent medication errors, including overdoses, incorrect routes of administration, drug interactions, and allergies. Computerized ordering systems should facilitate implementation of such programs and allow the use of checklists and guidelines to promote and improve standards of practice.

Managed Care

The demands of practicing in a managed care setting may increase a busy physician's susceptibility to making mistakes. Fatigue, information overload, and increased pressures to be a more productive member of the practice by seeing more patients for shorter visits can lead the physician to overlook important information. In addition, the role of the physician as the gatekeeper of referrals to specialists in most managed care plans, along with financial incentives for holding down the number of referrals, tests, hospital admissions, and hospital days, has the potential for increasing errors of omission. Ironically, the risk of malpractice litigation may counter this tendency by inducing physicians to practice defensively by ordering more tests. Within the extremes of these incentives and disincentives, there is a need for continuing education of physicians on standards of practice with regard to tests, referrals, and further treatment.

Both physicians and institutions should make whatever changes in practice are warranted to prevent new mistakes or the recurrence of similar events. Recognizing and dealing with mistakes honestly and directly can improve the quality of patient care and lead to a more rewarding practice.

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